

Chronic Hepatitis B in California

2016 Executive Summary

BACKGROUND

Hepatitis B is spread when blood, semen, or other body fluid infected with the Hepatitis B virus enters the body of a person who is not infected. Infants may be infected with hepatitis B at birth, when it is spread from mother to child. Hepatitis B can also be spread by unprotected sex and non-sterile drug-injection equipment. Approximately 90 percent of infants with hepatitis B become chronically infected, compared with 2–6 percent of adults.¹ Chronic Hepatitis B can lead to serious health issues, such as cirrhosis or liver cancer.

Hepatitis B is a vaccine preventable disease. Recommendations for adult hepatitis B vaccination were first issued in 1982.² Routine hepatitis B vaccination of children was implemented in 1991 and has dramatically decreased disease rates in the United States, particularly among children.² In 2017, the Federal Drug Administration approved a new two-dose adult HBV vaccine.³

In this summary, we describe changes in chronic hepatitis B burden over time, including demographic and geographic characteristics of newly reported chronic hepatitis B cases, to inform efforts to reduce hepatitis B transmission, and limit the progression and implications of viral hepatitis-related liver disease.

SUMMARY

In 2016, the burden of chronic hepatitis B infections reported in California was, on average, comparable to the prior four years. From 1989 to 2016, 287,087 chronic hepatitis B cases were newly reported to the California Department of Public Health (CDPH). In 2016, CDPH received 9,778 new reports of chronic hepatitis B infections, or 24.8 per 100,000 population. With 9,778 newly reported cases in 2016, chronic hepatitis B remained one of the most frequently reported communicable diseases in California.⁴

In 2016, 62 percent of newly reported chronic hepatitis B cases were among persons ages 25-54 years. In terms of race and ethnicity, Asian/Pacific Islander (API) persons continued to be overrepresented among chronic hepatitis B cases. However, surveillance data for 2016 show a growing percentage of cases reported from non-Hispanic White persons. Rates of newly reported chronic hepatitis B infection remained high in Los Angeles, San Francisco, and Sacramento counties,

¹ Centers for Disease Control and Prevention, Viral Hepatitis, Available at: <https://www.cdc.gov/hepatitis/hbv/index.htm>

² Schillie S, Vellozzi C, Reingold A, et al. Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices. MMWR Recomm Rep 2018; 67(No. RR-1):[1-31]. Available on the CDC website: <https://www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6701-H.pdf>

³ FDA approved the first new vaccine to prevention hepatitis B virus infection in 25 years. Available on the U.S. HHS website: <https://www.hhs.gov/hepatitis/blog/2017/11/29/fda-approves-new-hepatitis-b-vaccine/index.html>

⁴ Centers for Infectious Diseases-related disease cases among California residents, by year, 2015. Available on the C.A. HHS website: <https://data.chhs.ca.gov/dataset/infectious-disease-cases-by-county-year-and-sex>

and increased by more than 70 percent in five local health jurisdictions with populations $\geq 100,000$ (Kern, Los Angeles, Stanislaus, Tulare, and Yolo counties). Chronic hepatitis B cases reported among older API populations likely represent exposure to hepatitis B outside of the United States in countries where hepatitis B is endemic. Populations with increasing rates may indicate preventable sexual-related or injection drug use-related transmission. However, surveillance data reported to CDPH do not include behavioral risk factors and, therefore, the cause of trends among age groups and race/ethnicity are not clear.

DISCUSSION

The overall rate of newly reported chronic hepatitis B varied during 2012-2016. This may be due to a number of reasons, including the increased capacity to report cases electronically, changes in resources and capacity to identify prevalent chronic hepatitis B cases or varying incidence of hepatitis B infection.⁵ The rate of newly reported chronic hepatitis B cases in 2014 was notably higher compared to other years in the 2012-2016 time-period. This may be attributed to the implementation of electronic laboratory reporting (ELR) in October 2013 if existing chronic hepatitis B cases were reported for the first time using ELR in 2014.

Sixty-two percent of all newly reported chronic hepatitis B cases in 2016 were among persons ages 25-54 years. These findings are consistent with national trends; among the seven sites funded by the Centers for Disease Control and Prevention (CDC) to conduct enhanced viral hepatitis surveillance, 66 percent of chronic hepatitis B infections were among persons aged 25-54 years.⁶

Although overall chronic hepatitis B rates by gender were similar in 2016, females ages 25-34 had the highest rate of newly reported cases. The relatively high rate among women in this age group may be attributed to recommendations for hepatitis B screening during pregnancy and the perinatal hepatitis B prevention program (PHBPP) that has been in place in California since 1991. The PHBPP identifies pregnant women with hepatitis B infection whose infants are at risk for acquiring hepatitis B infection, and ensures these infants receive hepatitis B post-exposure prophylaxis and vaccination at birth.

From 2012 to 2016, APIs accounted for about two-thirds or more of newly reported chronic hepatitis B cases in California, which is home to the largest API population in the United States. This is a significant racial disparity given that APIs represent only 14 percent of the state population. This result is similar to national figures, which have found that APIs account for more than half of chronic hepatitis B cases with known race/ethnicity in the United States, despite making up 6 percent of the population nationwide. APIs are disproportionately affected by chronic hepatitis B because hepatitis B is endemic in many Asian countries and in most of the Pacific Islands. These findings underscore the importance of implementing CDC screening

⁵ Harris AM, Iqbal K, Schillie S, et al. Increases in Acute Hepatitis B Virus Infections — Kentucky, Tennessee, and West Virginia, 2006–2013. *MMWR*. 2016;65:47–50. Available at: <http://dx.doi.org/10.15585/mmwr.mm6503a2>

⁶ Centers for Disease Control and Prevention Surveillance for Viral Hepatitis-United States, 2015. Available on the CDC website: <https://www.cdc.gov/hepatitis/statistics/2015surveillance/index.htm#tabs-5-4>

recommendations for persons born in countries with hepatitis B prevalence of 2 percent or higher and U.S.-born persons not vaccinated as infants whose parents were born in countries with hepatitis B prevalence of 8 percent or higher.⁷

The geographic distribution of chronic hepatitis B in Los Angeles, San Francisco, and Sacramento counties reflects high and/or increasing proportions of APIs in the local population, as well as hepatitis B screening and testing efforts at the local level, including those led by community groups that aim to increase hepatitis B awareness in API communities.^{8,9,10} However, Kern, Stanislaus and Yolo counties, with relatively smaller API populations (less than 6 percent), were among jurisdictions where the rate of newly reported chronic hepatitis B cases increased by more than 50 percent between 2012 and 2016.

The majority of local health departments in California do not investigate all reports of chronic hepatitis B. Chronic hepatitis B cases among women of childbearing age are often prioritized to support perinatal hepatitis B prevention activities. At least one jurisdiction that routinely investigated chronic hepatitis B cases during the reporting period stopped investigation of cases among males in 2016 and two others reported reduced capacity for case classification during 2012-2016. These policy changes likely affected case counts and limit comparisons of rates across years in this reporting period.

KEY FINDINGS: CHRONIC HEPATITIS B IN CALIFORNIA

Overall

- In 2016, CDPH received 9,778 new reports of chronic hepatitis B infections. Overall, the rate of newly reported chronic hepatitis B infection was 24.8 per 100,000 population.
- From 1989 to 2016, 287,087 chronic hepatitis B cases were newly reported to CDPH.

By Gender

- In 2016, the rate of newly reported chronic hepatitis B was 24.8 cases per 100,000 population among females, and 24.6 cases per 100,000 population among males.
- Chronic hepatitis B was evenly distributed among females and males (50 percent each).

By Age

- In 2016, 62 percent of newly reported chronic hepatitis B cases in California were among persons ages 25-54 years.

⁷ Weinbaum CM, Williams, I, Mast E, et al. Recommendations for Identification and Public Health Management of Persons with Chronic Hepatitis B Virus Infection. *MMWR*. 2008; 57(No. RR-1):1-28.

⁸ Yoo, GJ, Fang, T, Zola, J, & Dariotis WM. (2012). Destigmatizing hepatitis B in the Asian American community: Lessons Learned from the San Francisco Hep B Free Campaign. *Journal of Cancer Education*. 27(1), 138-44.

⁹ Asian Pacific Liver Center (Los Angeles). <https://aplcv.verity.org/>

¹⁰ University of California Davis, Comprehensive Cancer Center. Sacramento Collaborative to Advance Testing and Care of Hepatitis B (SCrATCH B). Available on the UC Davis Medical Center website: <http://www.ucdmc.ucdavis.edu/cancer/research/programs/aancart/projects.html>

- In 2016, females ages 25-34 had the highest rate of newly reported chronic hepatitis B among all females (54.6 cases per 100,000 population)—likely due to the recommendation for hepatitis B screening during pregnancy—while males ages 45-54 had the highest rates (42.1 cases per 100,000 population) among all males.
- From 2012 to 2016, rates of newly reported chronic hepatitis B increased among both males and females 45 years of age and older.
- Persons less than 18 years of age have had the lowest rates of newly reported chronic hepatitis B infection due to routine hepatitis B vaccination of children since 1991.

By Race/Ethnicity

- In 2016, APIs represented 14 percent of the state population, but almost two-thirds (65 percent) of newly reported chronic hepatitis B cases with known race/ethnicity.
- In 2016, White and Hispanic/Latino persons were underrepresented among chronic hepatitis B cases in California. Whites were 40 percent of the state population, but only 17 percent of reported chronic hepatitis B cases, and Hispanics were 40 percent of the general population, but only 11 percent of reported chronic hepatitis B cases.
- From 2012 to 2016, the percentage of Whites among all reported chronic hepatitis B cases with known race/ethnicity increased from 12 to 17 percent. This may be due to changes in laboratory reporting of race/ethnicity information, changes in hepatitis B testing practices, or an increase in new infection among Whites.

By Geography

- Among local health jurisdictions with populations $\geq 100,000$, San Francisco County had the highest rate of newly reported chronic hepatitis B cases in California in 2016, followed by Los Angeles, Sacramento, San Diego and Yolo counties. These top five jurisdictions had higher rates of newly reported chronic hepatitis B than the statewide rate. Together, the five local health jurisdictions with the highest rates among jurisdictions with population $\geq 100,000$ accounted for 71 percent ($n=6,917$) of all newly reported chronic hepatitis B cases in 2016.
- Among local health jurisdictions with populations $< 100,000$, Lassen County had the highest rate of newly reported chronic hepatitis B infection in California in 2016, followed by Calaveras, Sutter, Lake and Mendocino counties. Calaveras and Lassen counties had higher rates of newly reported chronic hepatitis B infection than the statewide rate. Together, jurisdictions with populations $< 100,000$ accounted for less than 1 percent ($n=86$) of newly reported chronic hepatitis B cases in 2016.
- From 2012 to 2016, significant increases in rates of newly reported chronic hepatitis B infection occurred primarily in counties with populations $\geq 100,000$ including Stanislaus County (112 percent), Los Angeles County (106 percent), Yolo County (92 percent), Kern County (71 percent), Orange County (70 percent), Long Beach City (63 percent), San Bernardino County (36 percent), and Riverside County (28 percent).